REMARKS

Claims 1-10 are currently pending in the present application and claims 9-10 are currently allowed. Claims 1-5 and 8 have been amended in the expectation that the amendments will place this application in condition for allowance. The amendments do not introduce new matter within the meaning of 35 U.S.C. § 132. Accordingly, entry of the amendments is respectfully requested.

1. Rejection of Claims 1-8 under 35 U.S.C. § 112

The Official Action states that claims 1-8 are rejected under 35 U.S.C. § 112, first paragraph. As the basis for the rejection, the Official Action states:

> "The limitation 'has a pH of between 6.75 and 8.5 with microcidal as well as dispersing and surfactant properties' in claims 1 and 8 is considered new matter."

In response to this rejection, applicants have deleted the phrase "has a pH of between 6.75 and 8.5 with", rendering the rejection of claims 1-8 moot.

Accordingly, applicants respectfully request the Examiner to reconsider and withdraw the rejection of pending claims 1-8.

2. Rejection of claim 8 under 35 U.S.C. § 102(e)

The Official Action states that claim 8 stands rejected under 35 USC §102(e) as being anticipated by Morrow (5,731,008). As the basis for the rejection, the Official Action states:

> "Morrow discloses an irrigating medium comprising a microbiocidal electrochemically activated, aqueous saline solution (column 1, lines 11-12) having a pH of between 6.75 and 8.5 (column 5, line 14). The recitation of intended use in the claim has not been given patentable weight."

Applicants have deleted the phrase "has a pH of between 6.75 and 8.5", thus removing this ground for rejection. As to the ground that "Morrow discloses an irrigated medium comprising a microbiocidal electrochemically activated, aqueous saline solution", applicants respectfully traverse this rejection.

The test for anticipation is whether each and every element as set forth is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Bros. v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987); MPEP §2131. The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989); MPEP §2131. The elements must also be arranged as required by the claim. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990).

Morrow (U.S. Patent No. 5,731,008) discloses the use of a microbiocidal solution comprising an electrolysed saline containing regulated amounts of ozone and active chlorine species. Morrow does not propose separating and independently using the radical cation and radical anion containing streams or solutions. Further, Morrow does not teach methods of treating a root canal.

In contrast, amended claim 8 relates to irrigating mediums containing an electro-chemically activated, aqueous saline solution, wherein the electro-chemically activated aqueous solution may include only one or both of an aqueous predominantly anion-containing and an aqueous predominantly cation-containing solution, the anion-rich and cation-rich streams being produced and harvested separately and capable of being applied separately.

It is a new and inventive concept in the present application to produce and harvest two separate product streams, wherein the one product stream is a cation-rich stream and the other product stream is an anion-rich stream, and to apply the two product streams separately, whether concurrently or successively. The applicants have found that there is a vast difference in characteristics and efficacy of an

electrochemically-activated saline solution if the predominantly radical cation-containing solution and predominantly radical anion-containing solution are produced, harvested and applied as two separate product streams, whether concurrently or successively, in comparison to their effect when they are produced, harvested and applied as a single stream or solution comprising both cation and anion containing solutions.

Because Morrow does not propose separating and independently using the radical cation and radical anion containing streams or solutions, the reference does not teach each and every claim limitation as required by *Verdegaal Bros. v. Union Oil Co. of California* either expressly or inherently. Accordingly, a person of ordinary skill in the art would not have been able to arrive at the presently claimed invention based on the teachings of Morrow.

Applicants also point out to the Examiner that the word "separable" has been inserted into claim 5 to more clearly define the invention as including both predominantly cation-containing and predominantly anion-containing streams that are separable. The separability is possible because of the fact that the invention provides an electro-chemical reactor comprising an electro-chemical cell with two cylindrical (basis

at page 7, line 17) electrodes in a co-axial arrangement and with a cylindrical co-axial diaphragm between the electrodes. The co-axial diaphragm separates an annular inter-electrode space between the two co-axial electrodes into a cathodic and an anodic chamber respectively (as claimed in claim 4). It is because of this particular electro-chemical cell arrangement that the cation-rich and anion-rich streams are separable and can be applied particularly as two separate product streams, either simultaneously (concurrently) or successively in treating root canals.

Accordingly, applicants respectfully request the Examiner to reconsider and withdraw the rejection of claim 8.

CONCLUSION

Based upon the foregoing amendments and remarks, the presently claimed subject matter is believed to be enabled, novel, and patentably distinguishable over the prior art of record. The Examiner is therefore respectfully requested to reconsider and withdraw the rejections of claims 1-8 and allow all pending claims presented herein for reconsideration. Favorable action with an early allowance of the pending claims is earnestly solicited.

The Examiner is invited to telephone the undersigned attorney if she has any questions or comments.

Respectfully submitted,

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of

MARAIS

Examiner: M. Bumgarner

Serial No.: 09/582,700

Art Unit: 3732

Filing Date: August 21, 2000

For: **IRRIGATING MEDIUM FOR ROOT CANALS**

Appendix A

Please amend the following claims as indicated in the following marked up copy of the claims.

1. (Twice Amended) A method for treating root canals, comprising applying an irrigating medium to a root canal, wherein the irrigating medium comprises an aqueous solution being characterized in that it is electro-chemically activated and [has a pH of between 6.75 and 8.5 with], wherein the electro-chemically activated aqueous solution includes both an aqueous predominantly anion-containing and an aqueous predominantly cation-containing solution having microcidal as well as dispersing and surfactant properties.

2. (Cancelled)

3. (Twice Amended) The method of claim [2] 1, wherein the aqueous anion-containing solution and the aqueous cation-

containing solution are prepared by means of electrolysis of an aqueous solution of a salt.

4. (Three times amended) The method of claim [2] 1 wherein the anion-containing and the cation-containing solution are produced by an electro-chemical reactor comprising a through-flow, electro-chemical cell having two co-axial electrodes with a co-axial diaphragm between them so as to separate an annular inter-electrode space into cathodic and anodic chambers.

was the word not scanned

5. (Three times amended) The method of claim [2] 1 wherein the anion-containing solution is produced from a 10% aqueous NaCl solution, electrolysed to produce separable activated or excited radical cation and radical anion species, the anion-containing solution having an extremely high redox potential of up to about +1170 mV.

8. (Twice Amended) An irrigating medium for irrigating root canals, the irrigating medium comprising an electro-chemically activated, aqueous saline solution [having a pH of between 6.75 and 8.5 with], wherein the electro-chemically activated aqueous solution includes both an aqueous predominantly anion-containing and an aqueous predominantly cation-containing solution having microcidal as well as dispersing and surfactant properties.